State of Rhode Island and Providence Plantations

Department of Health

Division of Emergency Medical Services

Prehospital Care Protocols & Standing Orders

EFFECTIVE NOVEMBER 1, 2010

(corrected 10/1/2010)

Instructions for Use of the Protocols

LEVELS OF CARE

Except as specifically indicated, each protocol represents the standard of care that applies to **all EMTs**. In general, each protocol begins with **basic** assessment and treatment measures required of **all levels** of prehospital personnel. In addition, there may be **advanced** care practices specified for "**ALS PERSONNEL ONLY**," as shown in the example below:

ALS PERSONNEL ONLY

6. Place the patient on a cardiac monitor if not already done.

- Observe and record the initial ECG rhythm and any rhythm changes.
- Perform a 12-lead ECG if available, using standard lead placement, supine patient position if tolerated, and following ECG device manufacturer's instructions.

Although most of the standards are intended for all EMTs, some entire protocols apply exclusively to ALS personnel. These are indicated by a title that includes [ALS]. In addition, a few measures are specific to the practice of Paramedics. Such practices are indicated by "**EMT-Ps ONLY**," as shown in the example below

7. EMT-Ps ONLY, with authorization from Medical Control, may perform the following:

- Infuse EPINEPHRINE by IV infusion 2-10 mcg/min.

Generally, an instruction identified as "**BLS PERSONNEL ONLY**" is intended for EMTs practicing at the BLS level; there is typically a corresponding "**ALS PERSONNEL ONLY**" direction for EMTs practicing at the ALS level.

NOTE: EMT-Cardiacs and Paramedics may at times have to practice at a care level lower than their level of licensure. For example, an EMT-Cardiac working on a vehicle licensed as an A-2 is restricted to providing care at the BLS level. The distinctions explained in this section refer to an EMT's level of practice at the time patient care is being provided, *not* the EMT's level of licensure.

CONSENT

A patient has the right to decide whether to consent to care or to refuse care. Under ordinary circumstances, the health care provider will inform the patient of the need for recommended care, and the possible risks to health if care is not provided. This enables the patient to make an informed decision to consent to, or to refuse, the recommended care. However, when EMTs recognize that a life-threatening medical emergency exists, they ordinarily start to treat the patient immediately, unless the patient actually refuses care. This "implied consent" permits prompt care to be delivered, without the time-consuming discussion required for the patient to make an informed decision.

Therefore, the first steps of the protocol for *Standard Management of All Patients* direct the EMT to secure a safe scene and "perform a primary assessment, to identify and treat life-threatening problems," without requiring the EMT to obtain the patient's informed consent. For life-threatening emergencies, this directive applies to all patients. Further steps in the protocol direct the EMT to perform specified assessments, and to provide care following the protocols. With the exception of life-threatening emergencies, the protocols also direct the EMT to obtain valid consent (through contact with a parent or Medical Control) for further prehospital care and transportation of patients less than sixteen years of age.

CARE OF PEDIATRIC PATIENTS

Throughout these protocols, care of **pediatric patients** may differ from that of adult patients. In some cases, protocols may be specific to children and are so indicted by "(Pediatric)" in their title. In other protocols, pediatric-specific procedures, doses, etc. are indicated separately from adult patients as shown in the following example:

- Contact Medical Control for authorization to administer GLUCAGON, if available:
  - **Adult patients:** 1mg (1 unit) IM
  - **Pediatric patients (< 16 years old):** 0.1 mg/kg to a maximum of 1mg (1 unit), IM

COMBINING PROTOCOLS

There are many occasions when care must be guided by more than one protocol. EMTs are expected to use common sense and reasonable judgment to apply more than one protocol in the care of a patient, and to begin at an appropriate step when switching among protocols or utilizing more than one.

CHOICE OF THERAPY

In some cases, the protocols include several options for treatment that are similar. For example, several medications in the same treatment class or several devices for managing the airway. EMTs are required to choose among these options in a logical manner in order to best care for patients. Sometimes this will mean attempting treatment in a logical progression from least to most invasive or least to most complex. Sometimes this will mean choosing a single option, such as one drug in a class, and providing incremental doses before switching to an alternative. Any time there is a question or concern about a choice of therapy, contact Medical Control.

MEDICAL CONTROL

All patient care protocols require EMTs to "contact Medical Control" during prehospital care. Unless communication is a routine *pre-arrival notification*, direct voice contact between the EMT and physician is required. In the rare circumstances in which direct access to a physician is not feasible, communication may be related *through a licensed health care professional*.

In addition to the standing orders for EMTs, many protocols provide suggested treatment measures that the Medical Control physician may choose to order. EMTs are expected to provide further care consistent with the verbal orders issued by the Medical Control physician, including treatment, medications, or dosages that differ from the measures suggested in the protocols. As always, EMTs are expected to provide care that is permitted by their education, training, and scope-of-practice, and to use common sense and reasonable judgment in following Medical Control direction.

1.1 Standard Management of All Patients

1. **Respond to the scene in a safe manner.**
   - Using information available from the dispatcher, consider scene safety and initiate pre-arrival assessment and treatment of the patient.
   - Use lights and sirens as may be necessary on the way to the scene of an emergency, whether critical or unknown, or when transporting an emergency patient.
   - Use the National Incident Management System for all responses and scene management, using communications systems and other resources as indicated to establish and maintain safe and efficient operations.
2. **Approach the scene cautiously, and assess scene safety**
   - If a hazard is identified, request assistance and maintain safety through appropriate measures including Personal Protective Equipment (PPE) as indicated.
   - Non-latex gloves and proper size N95 mask (or better) are required for assessment and care of all patients with possible infectious disease.
   - Refer to the *Major Incident* protocol if patient area is determined to be hazardous.
3. **Determine the number of patients/potential patients.**
   - Determine whether the *Major Incident* protocol applies.
   - Determine whether the *Comfort One* protocol applies.
   - Determine whether the *Biological Death* protocol applies.
   - Determine whether adult or pediatric protocols and standards apply.

   
   A pediatric patient is one who is less than 16 years of age.
4. **Consider mechanism(s) of injury.**
   - Request assistance, as necessary.
   - Perform an initial assessment to identify and treat life-threatening problems.
5. **Follow all appropriate *RI EMS Prehospital Care Protocols and Standing Orders* to identify and treat life-threatening and critical conditions.**
6. **Assess each patient, obtain initial vital signs, and frequently reassess each patient's condition.**

7. **Follow all appropriate *RI EMS Prehospital Care Protocols and Standing Orders* to perform the following:**

   - Appropriate physical examination and medical history;
   - Assessment of vital signs (including respiratory rate, heart rate, and blood pressure), with frequent monitoring and/or reassessment. Abnormal vital signs for children and adults are shown in Table 1.

TABLE 1: Age-Related Abnormal Vital Signs

Age	Respiratory Rate		Heart Rate		Sys. BP
	Too Slow	*Too Fast*	*Too Slow*	*Too Fast*	*Too Low*
Newborn (birth –1month)	<30	>80	<100	>200	<40
Infant (1 month – 1yr)	<20	>70	<80	>180	<60
Preschool (1-6 years)	<16	>40	<70	>160	<75
School Age (6-12 years)	<12	>30	<60	>140	<85
Adolescent (12 – 16 years)	<10	>24	<60	>120	<90
Adult (>16 years)	<10	>24	<60	>120	<90
Note: Absent radial pulse indicates hypotension					

Core temperature measurement and regulation should be considered while caring for pediatric patients. Attempt to measure the temperature of any pediatric patient who may have a fever, cold exposure, or seizure. Pediatric patients, especially newborns, easily lose heat. Covering the head, heating the patient compartment, and using warmed IV fluids increase or maintain body temperature.

8. **Use patient monitoring equipment, such as pulse oximeter and ECG monitor, if available and indicated.**

9. **Provide treatment, stabilizing or supportive care**

   - Follow all appropriate *RI EMS Prehospital Care Protocols and Standing Orders* to provide indicated treatment and psychological support.
   - If a person who is (or appears to be) <16 years old presents to EMS personnel with condition(s) that may reasonably require prehospital care and/or care at a Hospital Emergency Facility, EMTs are to attempt to contact the child's legal guardian in order to obtain the guardian's informed consent to prehospital care and/or transportation of the child. Balance such efforts with need for treatment and/or transport given patient condition.
     - If unable to contact the legal guardian, or if child abuse or neglect is suspected, contact Medical Control for authorization to provide prehospital care and transportation, and request assistance from local or state police (per section 40-11-5 RIGL).
     - If child abuse or neglect is suspected, transfer the child to the care of Hospital Emergency Facility, personnel; then notify the Rhode Island Department for Children, Youth and their Families (1-800-RI-CHILD), as required by section 40-11-3 RIGL.

- For pediatric patients up to 5 feet tall (<35kg / 75lbs), use a pediatric dosing device approved by the Division of EMS to estimate patient weight; to determine appropriate equipment sizes; and to determine pre-calculated doses for most medications to be administered under standing orders.
  - Use adult protocols and standards for any pediatric patients beyond the range of the dosing device (>5 feet tall or >35kg / 75lbs.)
  - For newborn infants less than 1 month old, refer to the *Newborn Resuscitation* protocol.
  - For the few medications not included on a pediatric dosing device, and in case the dosing device is unavailable, pediatric drug dosages may be calculated using the patient's weight. IV admixtures and infusion rates may be calculated using the appropriate "Pediatric Rule of Sixes" (the formulas on which a pediatric dosing device is based).
  - When necessary, the weight of a pediatric patient may be estimated, using the method shown below:

Weight (in kilograms) ≈ 2 x age (in years) + 8

Example: Estimated weight of 4 year old: (2x4)+8 ≈ 8+8 = 16 kilograms

  - Estimated weight may then be used in the "Pediatric Rule of Sixes", as follows:

Pediatric Rule of Sixes for DOPAMINE

mg to mix with NORMAL SALINE for a total volume of 100 mL = 6 x weight (kilograms) Administration rate of 1 mL/hour = 1mcg/kg/min

Example: Preparation of a DOPAMINE infusion for 4 year old patient.

Weight of 4 year old? weight ≈ (2x4)+8 = 16 kg # mg of DOPAMINE to mix with normal saline ≈ 16kg x 6 = 96 mg

If using a burette: Inject 96 mg DOPAMINE (2.4 mL of a 40mg/mL solution) into 100 mL burette. Fill burette to 100 mL with NORMAL SALINE. Infusion rate of 5-20 mL/hour ≈ 5-20 mcg/kg/min.

If using an IV PUMP: Inject 96 mg DOPAMINE (2.4 mL of a 40mg/mL solution) into 100 mL bag of NORMAL SALINE. Infusion rate of 5-20 mL/hour or 5-20 mcg/kg/min.

10. Communicate with Medical Control.

- When the *RI Prehospital Care Protocols and Standing Orders* require the EMT to "contact Medical Control," such "contact" is to be either consultation or notification, as differentiated below.
- Consultation with Medical Control:
  - Direct voice contact between the EMT and physician is required.
  - In the rare circumstance in which direct access to a physician is not feasible, communication may be relayed through a licensed health care professional.
  - In a Major Incident, communication between designated leadership at the scene and receiving hospitals may replace communication between the individual EMT and Medical Control for each patient and may result in orders for a group of patients.
- All EMTs are **permitted** to consult directly with Medical Control physician at any time they feel such communication might be helpful in the care of a patient.
- All EMTs are **required** to consult directly with a Medical Control physician when caring for any patient whose condition includes any of the following:
  - impaired consciousness;
  - any age-related abnormal heart rate, respiratory rate, or blood pressure, as defined in *Table 1*;
  - poisoning or overdose;
  - deterioration from a previously stable condition.
- For any direct consultation with Medical Control, the EMT shall:
  - Request Medical Control and communicate directly with a designated Medical Control physician;
  - Provide a brief report that includes at least the following:
    - EMS unit identification and level (BLS and ALS);
    - patient's sex, approximate age and weight;
    - a statement of the chief complaint or apparent problem(s);
    - a brief history of the present illness or injury;
    - a brief summary of the patient's relevant medical history;
    - a report of the physical assessment, including vital and diagnostic signs;
    - a summary of prehospital care provided; and
    - an estimated time until arrival.

11. Pre-Arrival Notification to Hospital Facility

- Many cases require only routine assessment, treatment, and transportation. For cases that meet all of the following criteria, direct consultation with a Medical Control physician is **not** required, and once en route, the EMT may alternatively notify the destination Hospital Emergency Facility staff of the nature of the case and estimated time until arrival:
  - the patient is fully conscious; and
  - the patient has no age-related abnormal vital or diagnostic signs; and

- the patient's condition does not include poisoning or overdose; and
- the patient has not deteriorated from a previously stable condition.

For those services participating in the RI Patient Tracking System (PTS) program, the PTS entry shall serve as the routine pre-arrival notification to hospital staff. No additional notification is required.

- EMT responsible for pre-arrival notification shall:
  - indicate that the contact is for notification;
  - communicate directly with the triage nurse or designated health care provider; and
  - provide a brief summary report that includes at least the following:
    - EMS unit identification and level (BLS and ALS);
    - patient's sex, approximate age, and approximate weight;
    - a statement of the chief complaint or apparent problem(s);
    - a statement that the patient's vital signs are within normal age-related limits;
    - a summary of pre-hospital care provided;
    - an estimated time until arrival.

12. Transport patient

- Follow all appropriate *RI EMS Prehospital Care Protocols and Standing Orders* to transport the patient without delay to the appropriate Hospital Emergency Facility or Non-Hospital Emergency Facility, except as follows:
  - In a Major Incident, transport to a Department of Health designated alternative facility or location as directed.
  - Transport all patients in cardiac arrest, respiratory arrest, or respiratory failure to the nearest Hospital Emergency Facility, unless specifically directed to another destination by Medical Control.
- The signs and symptoms of pediatric patients developing serious illness or injury are often subtle. Therefore, all EMTs are required to transport all pediatric patients to a Hospital Emergency Facility for further evaluation unless:
  - An informed refusal of EMS transport is provided by the patient (if ≥ 16 years of age, or married, as provided by section 23-4.6-1 RIGL), or on the patient's behalf by a legal guardian (if patient <16 years of age); or
  - Medical Control, in direct consultation with the EMT, specifically authorizes the EMT to release the patient.
- All EMTs are required to transport patients in an appropriate restraint system including use of shoulder and transverse body belts.
- For pediatric patients of appropriate age, an appropriate restraint system should be a Federal Motor Vehicle Safety Standard (FMVSS) compliant child safety seat properly affixed to a seat or stretcher with the head section elevated unless:
  - care of the patient required immobilization of the spinal column, pelvis or lower extremities; or

- the patient requires resuscitation or active management of a critical problem.

- EMTs should use seatbelts during transport unless patient care prevents their use.
- All heavy items and equipment in the ambulance, such as monitors and oxygen bottles, should be adequately restrained during transport.
- Transport patients with the following specific conditions to the nearest Hospital Emergency Facility among the options listed in Table 3 below unless otherwise directed by medical control.

TABLE 3: Specialized Hospital Emergency Facilities

Condition	Criteria	Destination
Major Trauma, Adult	Within 30 minute transport time to Trauma Center (see *Trauma* protocol)	See *Appendix 3: Trauma Centers*
Major Trauma, Pediatric	Within 30 minute transport time transport to Trauma Center (see Trauma Protocol)	Hasbro Children's Hospital (division of RI Hospital)
STEMI*	Within 30 minute transport time transport to PCI Hospital (See *STEMI* protocol)	Charlton Hospital, Fall River (MA) Landmark Hospital, Woonsocket Lawrence & Memorial, New London (CT) Miriam Hospital, Providence Rhode Island Hospital, Providence
Carbon Monoxide Poisoning*	Measured CO Level >25 and symptoms	Kent Hospital, Warwick

* Contact Medical Control first

13. Assess all patients for level of pain using a pain scale.

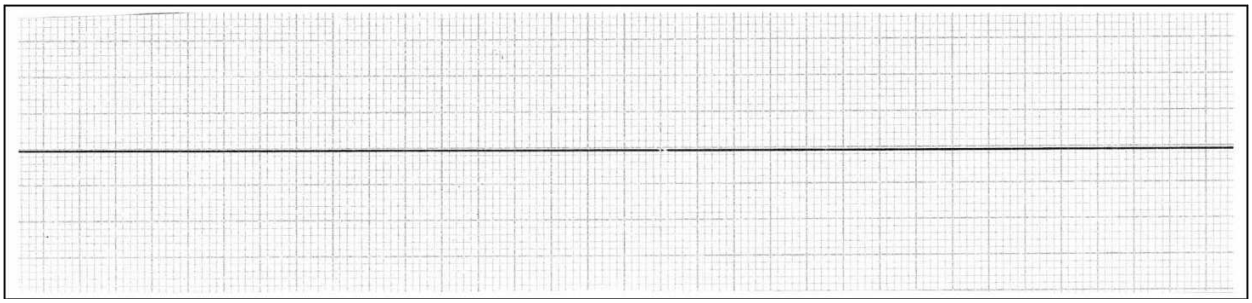
- Record the patient's level of pain, if any, on the *RI EMS Ambulance Run Report*.
- Treat pain using supportive measures and the *Pain Management and Sedation* protocol.
- Record changes in pain level after interventions as indicated.

14. Attach an approved patient identification and tracking device to the patient, if available, any belongings transported with the patient, and the *RI EMS Ambulance Run Report*.

15. For those services participating in the RI Patient Tracking System (PTS) program, enter all required information in the PTS after applying the designated tracking device.

16. Document all incident information by completing the *RI EMS Ambulance Run Report*.

2.2 Asystole [ALS]



TREATMENT

1. **Check for a pulse. Follow the *Asystole* protocol only if the pulse is absent.**
2. **Begin the Basic Life Support (BLS) CPR sequence of the American Heart Association.**
   - Do not cease CPR for more than 5 seconds, except for a maximum of 30 seconds to intubate or move the patient, until the patient has been stabilized, or until authorized by Medical Control to do so.

   ⚠ For infants up to 1 month of age, follow the *Newborn Resuscitation* protocol.

3. **Place the patient on a cardiac monitor.**
   - Observe and record the initial ECG rhythm, and any rhythm changes.
   - Attach a copy of the initial rhythm strip to the hospital copy of the *RI EMS Ambulance Run Report*.
   - Check the leads and monitor to assure that the unit is functioning properly.
   - If ECG rhythm is unclear and possibly low amplitude ventricular fibrillation, follow *the Ventricular Fibrillation* protocol.
4. **Start at least one IV access of NORMAL SALINE or LACTATED RINGER'S solution:**
   - Administer NORMAL SALINE or LACTATED RINGER'S solution at KVO (~20 ml/hr).
   - If unable to establish IV in 2 attempts or 5 minutes, continue CPR and transport the patient to the nearest Hospital Emergency Facility immediately. Any further attempt at IV placement must occur en route.
5. **Consider advanced airway management using an approved airway device and following all appropriate protocols.**
6. **Whenever possible, ventilate the patient at the appropriate rate, using high concentration OXYGEN.**

7. **Administer EPINEPHRINE as indicated below:**
   - **Adult patients:** administer EPINEPHRINE 1:10,000 1.0 mg IV push; Repeat every 3-5 minutes if asystole persists.
     - If unable to establish an IV, administer EPINEPHRINE 1:1,000 2.0-2.5 mg diluted in 10 mL NORMAL SALINE by endotracheal tube. Repeat every 3-5 minutes if asystole persists.
   - **Pediatric patients <16 years of age:** administer EPINEPHRINE as indicated on Pediatric Dosing Device (0.01 mg/kg), and repeat every 3-5 minutes as necessary.
8. **If still asystolic, administer ATROPINE SULFATE as indicated below:**
   - **Adult patients:** administer ATROPINE SULFATE 1.0 mg IV push. Repeat every 3-5 minutes if asystole persists, to a maximum of 3.0 mg (3 doses).
   - If unable to establish an IV, administer ATROPINE SULFATE 1-2 mg diluted in 10 mL NORMAL SALINE by endotracheal tube. Repeat every 3-5 minutes if asystole persists, to a maximum of 6.0 mg.
9. **Transport the patient without delay to nearest appropriate Hospital Emergency Facility.**
10. **Contact Medical Control.**
11. **With authorization from Medical Control, consider administration of GLUCAGON if beta-blocker overdose is suspected.**
12. **EMT-Ps, or EMT-Cs with authorization from Medical Control, may consider administration of CALCIUM CHLORIDE, 1g IV, if hyperkalemia or calcium channel blocker overdose are suspected.**
13. **Document all incident information by completing the *RI EMS Ambulance Run Report*.**

2.3 Bradycardia (Adult, Symptomatic) [ALS]

For pediatric patients < 16 years of age, follow *Bradycardia (Pediatric)* protocol.

RECOGNITION

- ✔ Ventricular rate <60 per minute in a suspected cardiac patient, with any of the following: chest pain; dyspnea; decreased level of consciousness; hypotension; shock; ventricular escape beats; or congestive heart failure (CHF).

ASSESSMENT AND INITIAL TREATMENT

1. **Assess patient, obtain initial vital signs, and frequently reassess patient's condition.**
2. **Loosen tight clothing and allow the patient to chose a comfortable position unless hypotensive (hypotensive patients should be supine.)**
3. **Administer OXYGEN with the highest-concentration device tolerated.**

SPECIFIC INTERVENTIONS

4. **Place the patient on a cardiac monitor.**
   - Observe and record the initial ECG rhythm and any rhythm changes.
   - Attach a copy of the initial rhythm strip to the hospital copy of the *RI EMS Ambulance Run Report*.
5. **Start at least one IV of NORMAL SALINE or LACTATED RINGER'S solution to run at KVO rate (~20 mL/hour).**
   - If unable to establish an IV in 2 attempts or 5 minutes, transport the patient to Hospital Emergency Facility. Any further attempt at IV placement must occur en route.
6. **Administer ATROPINE SULFATE 0.5mg IV push.**
   - Repeat every 3-5 minutes if symptomatic bradycardia persists, to a maximum of 3.0 mg.

- If unable to establish an IV and there is an endotracheal tube in place, administer ATROPINE SULFATE 1-2 mg diluted in 10 mL NORMAL SALINE by endotracheal tube. Repeat every 3-5 minutes if symptomatic bradycardia persists, to a maximum of 6.0 mg.

7. **Transport the patient without delay to a Hospital Emergency Facility.**

8. **Consider transcutaneous pacing, if available.**

   - For conscious patients, consider contacting Medical Control for authorization to administer sedative and/or analgesic, following the *Pain Management and Sedation* protocol.

9. **EMT-Ps, or EMT-Cs with authorization from Medical Control, may administer DOPAMINE HCl by IV infusion at 2-20 mcg/kg/min (400 mg in 250 mL D5W or NORMAL SALINE = 1600 mcg/mL) and titrate the rate to achieve a systolic blood pressure > 90mm Hg.**

> ⚠ Due to the high risk of side effects with incorrect dosage, DOPAMINE infusions should be administered by IV Infusion Pump when possible. If an IV Infusion Pump is not available, DOPAMINE may be administered by carefully monitoring the drip rate in a "micro-drip" IV administration set. Passive or gravity-controlled rate control devices (e.g., Dial-a-Flo®) are considered incapable of strict mechanical control and their use is not permitted at any time.

10. **Contact Medical Control.**

11. **With authorization from Medical Control, consider administration of GLUCAGON if beta-blocker overdose is suspected.**

12. **EMT-Ps, or EMT-Cs with authorization from Medical Control, may consider administration of CALCIUM CHLORIDE, 1g IV, if hyperkalemia or calcium channel blocker overdose are suspected.**

13. **EMT-Ps ONLY, with authorization from Medical Control, may infuse EPINEPHRINE by IV infusion at a rate of 2-10 mcg/min.**

> ⚠ Due to the high risk of side effects with incorrect dosage, EPINEPHRINE infusions should be administered by IV Infusion Pump when possible. If an IV Infusion Pump is not available, EPINEPHRINE may be administered by carefully monitoring the drip rate in a "micro-drip" IV administration set. Passive or gravity-controlled rate control devices (e.g., Dial-a-Flo®) are considered incapable of strict mechanical control and their use is not permitted at any time.

14. **Document all incident information by completing the *RI EMS Ambulance Run Report*.**

2.4 Bradycardia (Pediatric)

For adult patients >= 16 years of age, follow *Bradycardia (Adult, Symptomatic)* protocol.

RECOGNITION

- A slow ventricular rate (as shown in the following table) accompanied by any of the following: chest pain; respiratory distress; decreased level of consciousness; hypotension; shock; CHF.

> **NOTE:** Pediatric bradycardia is usually due to hypoxemia.

TABLE 1: Abnormal Vital Signs

Age	Respiratory Rate		Heart Rate		Sys. BP
	Too Slow	*Too Fast*	*Too Slow*	*Too Fast*	*Too Low*
Newborn (birth –1month)	<30	>80	<100	>200	<40
Infant (1 month – 1yr)	<20	>70	<80	>180	<60
Preschool (1-6 years)	<16	>40	<70	>160	<75
School Age (6-12 years)	<12	>30	<60	>140	<85
Adolescent (12 – 16 years)	<10	>24	<60	>120	<90
Note: Absent radial pulse indicates hypotension					

TREATMENT

1. **For newborn infants, refer to the *Newborn Resuscitation* protocol.**
2. **Perform an initial assessment, the following:**
    - Level of consciousness/responsiveness, airway maintenance;

- Respiratory rate and effort, skin/mucous membrane color;
- Heart rate, distal pulses, temperature, capillary refill, BP.

3. **If there is evidence of shock, follow the *Shock* protocol.**

4. **Administer OXYGEN with the highest-concentration device tolerated.**

   - Children with impaired consciousness, cyanosis, or signs of shock require assisted ventilations with high-concentration OXYGEN and airway adjuncts.
   - Consider advanced airway management, as indicated in the *Airway Management and Respiratory Support* protocol.
   - Whenever possible, use high-concentration oxygen to ventilate the patient at the appropriate rate shown in *Table 2*.

TABLE 2: Approximate Normal Respiratory Rates

Age	Breaths/Minute
Newborn (birth –1month)	< 55
Infant (1 month – 1yr)	< 45
Preschool (1-6 years)	< 25
School Age (6-12 years)	< 20
Adolescent (12 – 16 years)	< 15

5. **Re-evaluate heart rate (monitor ECG, if able).**

   - If heart rate is normal (see table 1), continue assisted ventilations and/or resuscitation as needed for breathing (i.e., BVM ventilations or supplemental OXYGEN).
   - If heart rate is abnormally slow (see table 1) and there is evidence of shock despite supplemental oxygenation and ventilation, perform chest compressions at the rate recommended by American Heart Association guidelines, continue CPR until spontaneous heart rate is normal.

6. **Monitor patient's oxygen saturation, if pulse oximeter is available.**

ALS PERSONNEL

7. **Place the patient on a cardiac monitor.**

   - Observe and record the initial ECG rhythm and any rhythm changes.
   - Attach a copy of the initial rhythm strip to the hospital copy of the *RI EMS Ambulance Run Report*.

8. **Start at least one IV of NORMAL SALINE or LACTATED RINGER'S solution to run at KVO rate (~20 mL/hour).**

   - If unable to establish an IV in 2 attempts or 5 minutes, transport the patient to a Hospital Emergency Facility. Any further attempt at IV placement must occur en route.

Prior to administration of any medication to a patient with an intracranial shunt, contact Medical Control.

9. **Administer EPINEPHRINE as indicated on Pediatric Dosing device, and repeat every 3-5 minutes as necessary:**
   - **IV push dose:** EPINEPHRINE 1:10,000 0.01 mg/kg (0.1 mL/kg)
   - **Endotracheal dose:** EPINEPHRINE 1:1,000 0.1 mg/kg (0.1 mL/kg)
10. **If bradycardia continues, consider ATROPINE SULFATE, as indicated on Pediatric Dosing device, to treat increased vagal tone:**
    - **IV push dose:** ATROPINE SULFATE 0.02 mg/kg (0.02 mL/kg); may repeat once in 5 minutes if necessary. Minimum dose: 0.1 mg; maximum dose: 1.0 mg (child) or 2.0 mg (adolescent).
    - **Endotracheal dose:** ATROPINE SULFATE 0.05 mg/kg (0.05 mL/kg) ; may repeat once in 5 minutes if necessary. Minimum dose: 0.1 mg; maximum dose: 2.0 mg (child) or 4.0mg (adolescent).
11. **Consider transcutaneous pacing, if available.**

ALL EMTs

12. **Contact Medical Control.**
13. **Transport patient without delay to a Hospital Emergency Facility.**
14. **With authorization from Medical Control, consider administration of GLUCAGON if beta-blocker overdose is suspected.**
15. **EMT-Ps, or EMT-Cs with authorization from Medical Control, may consider administration of CALCIUM CHLORIDE, 1g IV, if hyperkalemia or calcium channel blocker overdose are suspected.**
16. **Document all incident information by completing the *RI EMS Ambulance Run Report*.**

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2.6 Congestive Heart Failure (Pulmonary Edema)

RECOGNITION

- ✔ Respiratory distress without upper airway obstruction or stridor but with one or more of the following: heart rate >120 (adult), respiratory rate >30 (adult), hypoxia, jugular venous distention, rales, diaphoresis, past history of congestive heart failure

TREATMENT

ALL EMTs

For pediatric patients younger than 16 years of age, contact Medical Control for permission to administer any medication other than OXYGEN.

1. **Assess patient, obtain initial vital signs, and frequently reassess patient's condition.**
2. **Allow the patient to chose a comfortable position unless hypotensive (hypotensive patients should be supine.)**
3. **Administer OXYGEN with the highest-concentration device tolerated. Assist ventilation as indicated.**
4. **Adult patients: administer ASPIRIN (160-325 mg, chewable preferred).**

Patients who have taken any of the following *phosphodiesterase inhibitor medications* within the last 48 hours should not receive NITROGLYCERIN: sildenafil (Viagra®), vardenafil (Levitra®), tadalafil (Cialis®).

BLS PERSONNEL

5. **Contact Medical Control for authorization to perform any or all of the following:**
   - Adult patients with systolic BP ≥ 90 mmHg: administer NITROGLYCERIN 0.4 mg (1/150 grain) sublingually, by tablet, or by oral spray, of the patient's own medication only. Monitor blood pressure every 5 minutes.
   - For patients who are wheezing, administer ALBUTEROL as indicated below:
     - **Adult Patients:** administer 2.5 mg of ALBUTEROL 0.083% solution (or 0.5 mL of 0.5% solution mixed with 2.5 mL NORMAL SALINE) by nebulizer over 5 to15 minutes. May repeat x 2 en route.
     - **Patients > 6 months of age:** administer 2.5 mg of ALBUTEROL 0.083% solution (or 0.5mL of 0.5% solution mixed with 2.5 mL NORMAL SALINE) by nebulizer over 5 to 15 minutes. May repeat x 2 en route.

- **Patients < 6 months of age:** administer 1.25 mg of ALBUTEROL 0.083% solution (or 0.25 mL 0.5% solution mixed with 2.5 mL NORMAL SALINE) by nebulizer over 5 to 15 minutes. May repeat x2 en route.

ALS PERSONNEL ONLY

6. **Place the patient on a cardiac monitor.**
   - Observe and record the initial ECG rhythm, and any rhythm changes.
   - Attach a copy of the initial rhythm strip to the hospital copy of the *RI EMS Ambulance Run Report*.
   - Perform a 12-lead ECG if available using standard lead placement, supine patient position if tolerated, and following ECG device manufacturer's instructions.
   - If ECG interpretation suggests acute ST Elevation MI (STEMI), refer to the *ST-Elevation Myocardial Infarction (STEMI)* protocol.
     - Transmit the ECG to the receiving hospital by telemetry if available. If telemetry is not available, present the ECG to hospital staff immediately upon arrival.
     - Attach a copy of the 12-lead ECG, identified with the patient's name, patient's birthdate, date of transport, and EMS agency name, to the hospital copy of the *RI EMS Ambulance Run Report*. The original ECG, similarly identified, should be attached to the EMS Agency copy of the *RI EMS Ambulance Run Report*.
7. **Establish IV access.**
   - If IV fluid is administered, run at KVO rate (~20 ml/hour).
   - If unable to establish IV in 2 attempts or 5 minutes, transport the patient to a Hospital Emergency Facility. Any further attempt at IV placement must occur en route.
8. **Adult patients with systolic BP ≥ 90 mmHg: administer NITROGLYCERIN 0.4 mg (1/150 grain) sublingually, by tablet or by oral spray. Repeat every 5 minutes, for as long as patient has respiratory distress and systolic blood pressure ≥ 90 mmHg, up to a maximum of three doses NOT including any doses that the patient may have self-administered prior to EMS arrival. Monitor blood pressure every 5 minutes.**
   - If unable to establish an IV, EMTs may still administer NITROGLYCERIN for patient with systolic BP ≥150 mmHg.
   - **Adult patients with systolic BP ≥ 90 mmHg:** administer NITROGLYCERINE PASTE, 1-2 inches to skin. Remove NITROGLYCERINE PASTE if blood pressure decreases below 90 mmHg systolic.
   - **EMT-Ps ONLY, for adult patients with systolic BP ≥ 90mmHg,** may administer NITROGLYCERINE intravenously. Begin infusion USING AN IV INFUSION PUMP at a rate of 10 mcg/min and increase rate by 10 mcg/min every 5 minutes as long as the patient has respiratory distress and systolic blood pressure remains ≥ 90mmHg, or to a maximum rate of 300 mcg/min.

Due to the high risk of side effects with incorrect dosage, NITROGLYCERINE infusions may only be administered by IV Infusion Pump.

- **EMT-Cs and EMT-Ps with specific training only:** consider use of an approved ventilation device (CPAP, BiPAP, etc).

9. **For patients who are wheezing and have a history of COPD/asthma, consider administration of IPRATROPIUM (ATROVENT®) and/or ALBUTEROL as indicated below:**
   - Administer IPRATROPIUM (ATROVENT®) as follows:
     - **All Patients:** Administer 500mcg/2.5 ml of IPRATROPIUM (ATROVENT®) solution by nebulizer over 5 to 15 minutes. Administer one dose of IPRATROPIUM only. IPRATROPIUM may be combined with ALBUTEROL (DUONEB®).
   - Administer ALBUTEROL as follows:
     - **Adult Patients:** administer 2.5 mg of ALBUTEROL 0.083% solution (or 0.5 mL of 0.5% solution mixed with 2.5 mL NORMAL SALINE) by nebulizer over 5 to 15 minutes. May repeat x2 en route.
     - **Patients > 6 months of age:** administer 2.5 mg of ALBUTEROL 0.083% solution (or 0.5 mL of 0.5% solution mixed with 2.5 mL NORMAL SALINE) by nebulizer over 5 to15 minutes. May repeat x2 en route.
     - **Patients < 6 months of age:** administer 1.25 mg of ALBUTEROL 0.083% solution (or 0.25 mL of 0.5% solution mixed with 2.5 mL NORMAL SALINE) by nebulizer over 5 to 15 minutes. May repeat x2 en route.
10. **Treat specific dysrhythmias following all appropriate protocols.**
11. **Contact Medical Control for permission to perform the following:**

> ⚠ Authorization from Medical Control is required for administration of pain management and sedation medications for any purpose other than pain management (e.g. for sedation or treatment of CHF) unless specifically authorized by protocol (e.g. *Seizures*, *Major Incident*).

   - For patients exhibiting significant respiratory distress, administer or MORPHINE SULFATE, following the *Pain Management and Sedation* protocol. FENTANYL is not recommended for treatment of CHF.
   - For patients exhibiting signs of shock, consider administration of DOPAMINE and IV bolus of NORMAL SALINE or LACTATED RINGER'S solution as directed by Medical Control.
   - For patients who routinely take oral FUROSEMIDE, administration of the patient's daily dose IV if not already taken orally, up to a maximum of 80mg.

ALL EMTs

12. **Transport the patient without delay to a Hospital Emergency Facility.**
13. **Document all incident information by completing the *RI EMS Ambulance Run Report*.**

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2.7 Pulseless Electrical Activity (PEA) [ALS]

RECOGNITION

- Unresponsive, apneic, pulseless patient with electrical activity other than ventricular fibrillation (VF) or ventricular tachycardia (VT).

> **NOTE:** Causes of PEA include: acidosis; cardiac tamponade; hypothermia; hypovolemia; hypoxia; myocardial infarction; overdose; pulmonary embolus; shock; and tension pneumothorax.

ASSESSMENT AND TREATMENT

1. **Begin Basic Life Support (BLS) CPR using the current sequence of the American Heart Association.**

> DO NOT INTERRUPT CPR FOR MORE THAN 5 SECONDS EXCEPT FOR A MAXIMUM OF 30 SECONDS TO DEFIBRILLATE, MOVE THE PATIENT OR PERFORM ADVANCED AIRWAY TECHNIQUES WHEN INDICATED. IF SAFE PATIENT TRANSPORT WILL CAUSE DELAYS, PERFORM ALS INTERVENTIONS PRIOR TO PATIENT MOVMENT IF POSSIBLE.

2. **Check the pulse. Follow the *Pulseless Electrical Activity (PEA)* protocol only if the pulse is absent.**
3. **Place the patient on a cardiac monitor.**
   - Observe and record the initial ECG rhythm and any rhythm changes.
   - Attach a copy of the initial rhythm strip to the hospital copy of the *RI EMS Ambulance Run Report*.
4. **Start at least one IV of NORMAL SALINE or LACTATED RINGER'S solution.**
   - For cardiac arrest NOT caused by hypovolemia, run at KVO rate (~20 mL/hour).
   - If hypovolemia is suspected:
     - **Adult patients:** administer 500ml NORMAL SALINE or LACTATED RINGER'S solution to run at wide-open rate.
     - **Pediatric patients < 5 feet tall (<35 kg/ 75 lbs.):** administer boluses of 20 ml/kg by rapid IV push. Assess and re-bolus if indicated.
   - If unable to establish an IV in 2 attempts or 5 minutes, continue CPR and transport the patient to the nearest appropriate Hospital Emergency Facility. Any further attempt at IV placement must occur en route.
5. **Consider advanced airway management as indicated in the *Airway Management and Respiratory Support* protocol.**

6. **Administer EPINEPHRINE.**
   - **Adult patients:** administer EPINEPHRINE 1:10,000 1.0 mg IV push. Repeat every 3-5 minutes if PEA persists.
     - If unable to establish an IV, administer EPINEPHRINE 1:1,000 2.0-2.5 mg diluted in 10 mL NORMAL SALINE by endotracheal tube. Repeat every 3-5 minutes if PEA persists.
   - **Pediatric patients <5 feet tall (<35 kg/75lbs):** administer EPINEPHRINE 1:10,000 0.01 mg/kg (0.1 mL/kg) as indicated on Pediatric Dosing device, and repeat every 3-5 minutes as necessary:
     - If unable to establish an IV, administer EPINEPHRINE 1:1,000 0.1 mg/kg (0.1 mL/kg), diluted in 3-5 mL NORMAL SALINE by endotracheal tube. Repeat every 3-5 minutes if PEA persists.
7. **If PEA involves a bradycardic rhythm, administer ATROPINE SULFATE as indicated below:**
   - Adult patients: administer ATROPINE SULFATE 1.0 mg IV push. Repeat every 3-5 minutes if PEA with slow ventricular rate persists, to a maximum of 3.0 mg.
   - If unable to establish an IV, administer ATROPINE SULFATE 1-2 mg diluted in 10 mL NORMAL SALINE by endotracheal tube. Repeat every 3-5 minutes if PEA with slow ventricular rate persists, to a maximum of 6.0 mg.
8. **If ventricular fibrillation occurs, follow *Ventricular Fibrillation* protocol.**
9. **EMT-Ps ONLY: If PEA persists, may perform pleural decompression.**
10. **Transport the patient without delay to the nearest appropriate Hospital Emergency Facility.**
11. **Contact Medical Control.**
    - For certain conditions, Medical Control may authorize administration of SODIUM BICARBONATE 1 mEq/kg IV push, followed by 0.5 mEq/kg IV push every 10 minutes.
    - With authorization from Medical Control, consider administration of GLUCAGON if beta-blocker overdose is suspected.
    - EMT-Ps, or EMT-Cs with authorization from Medical Control, may consider administration of CALCIUM CHLORIDE, 1g IV, if hyperkalemia or calcium channel blocker overdose are suspected.
12. **Document all incident information by completing the *RI EMS Ambulance Run Report*.**

2.8 ST-Elevation Myocardial Infarction (STEMI)

RECOGNITION

- Patients with any acute symptoms consistent with STEMI and an ECG consistent with STEMI. This may be either an ECG with 2mm or greater ST elevation in 2 or more anatomically contiguous leads or an ECG documenting new onset left bundle branch block (LBBB). The latter situation may occur in patients evaluated at a healthcare facility or who carry an ECG copy with them.
- Patients may have been resuscitated from an arrhythmia (VF, VT, Bradycardia) and have an ECG consistent with STEMI.
- There may sometimes be laboratory confirmation of acute myocardial infarction (MI) and these patients may be treated according to the STEMI protocol as well. ST elevation may also occur in other conditions, such as pericarditis, myocarditis, and chronic cardiac disease.

> Patients with STEMI, particularly those with evidence for shock (but not in cardiac arrest) may benefit from early, direct care at a hospital capable of Percutaneous Coronary Intervention (PCI). These hospitals are called PCI Hospitals, and are listed in the *Standard Management of All Patients* protocol.

TREATMENT

ALL EMTs

1. **Assess patient, obtain initial vital signs, and frequently reassess patient's condition.**
2. **Provide airway management if indicated.**
3. **Administer OXYGEN with the highest concentration device tolerated.**
4. **Administer ASPIRIN (160-325mg, chewable preferred) unless allergic or unable to swallow safely.**

ALS PERSONNEL

5. **Place the patient on a cardiac monitor if not already done.**
6. **Observe and record the initial ECG rhythm and any rhythm changes.**
   - Attach a copy of the initial rhythm strip to the hospital copy of the *RI EMS Ambulance Run Report*.
   - Interpret a recent 12-lead ECG, preferably performed using standard lead placement, supine patient position if tolerated, and following ECG device manufacturer's instructions.
   - If ECG interpretation suggests acute ST Elevation MI (STEMI), contact Medical Control at the closest PCI Hospital to discuss permission to proceed directly to a PCI Hospital.
   - Notify the receiving hospital immediately in order to minimize time to intervention.

- Transmit the ECG to the receiving hospital by telemetry if available. If telemetry is not available, present the ECG to hospital staff immediately upon arrival.
- Attach a copy of the 12-lead ECG, identified with the patient's name, patient's birthdate, date of transport, and EMS agency name, to the hospital copy of the *RI EMS Ambulance Run Report*. The original ECG, similarly identified, should be attached to the EMS Agency copy of the *RI EMS Ambulance Run Report*.

Contact Medical Control at the closest PCI Hospital, if available. If a PCI Hospital is within a 30 minute transport radius of the patient, it should be the preferred receiving hospital for patients with suspected STEMI.

7. Establish IV access.

- Administer NORMAL SALINE or LACTATED RINGER'S to run at KVO (20 mL/hr).
- Preferred site for IV access: avoid antecubital veins if possible.
- If unable to establish IV access in 2 attempts or 5 minutes, transport the patient to a Hospital Emergency Facility. Any further attempt at IV placement must occur en route.
- A second IV line should be established en route for patients with suspected STEMI.
- If the patient's systolic BP drops below 90 mmHg and there are no signs of congestive heart failure, administer a 250 mL bolus of NORMAL SALINE or LACTATED RINGER'S.

8. Patients with systolic BP ≥90 mm Hg and IV access: administer NITROGLYCERIN 0.4 mg x 1 tablet or oral spray sublingually.

- Monitor blood pressure every 5 minutes.
- May repeat dosage in 5 minute intervals if systolic blood pressure remains >90 mmHg. There is a maximum of three doses NOT including any doses that the patient may have self-administered prior to EMS arrival.

If the ECG suggests inferior, posterior, or right-sided STEMI, administer NITROGLYCERIN carefully as it may cause significant decrease in blood pressure, and administer NORMAL SALINE or LACTATED RINGER'S as indicated for hypotension.

Patients who have taken any of the following *phosphodiesterase inhibitor medications* within the last 48 hours should not receive NITROGLYCERIN: Sildenafil (Viagra), Vardenafil (Levitra), tadalafil (Cialis).

- If unable to establish an IV, EMTs may still administer NITROGLYCERIN for patients with systolic BP >150 mmHg.

9. Treat specific dysrhythmias and other conditions following all appropriate protocols.

10. **Provide pain relief, following the *Pain Management and Sedation* protocol.**
    - For EMT-Ps, FENTANYL is the preferred narcotic for pain management in suspected cardiac chest pain.
11. **If the blood pressure remains below 90mmHg, contact Medical Control for authorization to administer further IV normal saline or vasopressors including DOPAMINE and/or EPINEPHRINE.**

ALL EMTs

12. **Transport the patient without delay to a Hospital Emergency Facility or PCI Hospital if so directed by Medical Control. Follow the destination plan outlined in the *Standard Management of All Patients* protocol.**
13. **Document all incident information by completing the *RI EMS Ambulance Run Report*. Attach properly identified copy of rhythm strip or ECG to run report .**

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2.9 Supraventricular Tachycardia (SVT) [ALS]

Adult Patient, Conscious with Stable Vital Signs

For pediatric patients < 16 years of age, follow *SVT (Pediatric) – Stable* protocol

RECOGNITION

- ✔ Conscious patient with heart rate of 140-220 beats per minute; QRS width <0.12 seconds.

NOTE: If the QRS width >0.12 seconds, consider ventricular tachycardia (VT).

TREATMENT

1. **Assess patient, obtain initial vital signs, and frequently reassess patient's condition.**
2. **Loosen tight clothing and allow the patient to choose a comfortable position unless hypotensive (hypotensive patients should be supine).**
3. **Administer OXYGEN with the highest-concentration device tolerated.**
4. **Place the patient on a cardiac monitor.**
   - Observe and record the initial ECG rhythm, and any rhythm changes.
   - Attach a copy of the initial rhythm strip to the hospital copy of the *RI EMS Ambulance Run Report*.
5. **Encourage the patient to perform vagal maneuvers (e.g., bearing down, etc.)**
6. **Establish IV access.**
   - Start at least one IV of NORMAL SALINE or LACTATED RINGER'S solution to run at KVO rate (~20 mL/hour).
   - If unable to establish an IV in 2 attempts or 5 minutes transport the patient to a Hospital Emergency Facility. Any further attempt at IV placement must occur en route.
7. **Administer ADENOSINE (Adenocard®) as indicated below:**

STOP

ADENOSINE should not be given to patients taking Persantine® or Aggrenox®, or patients who have had a heart transplant as the effects may be prolonged and unpredictable.

   - Administer ADENOSINE 6 mg, rapid IV push (over 1-3 seconds), followed by rapid flush with 20 mL NORMAL SALINE or LACTATED RINGER'S solution.
     - If atrial fibrillation or atrial flutter is confirmed, EMT-Ps ONLY may skip administration of ADENOSINE and proceed directly to administering DILTIAZEM or VERAPAMIL as described below.

- If 6 mg dose does not convert rhythm within 1-2 minutes, administer ADENOSINE 12 mg, rapid IV push (over 1-3 seconds), followed by rapid flush with 20 mL NORMAL SALINE or LACTATED RINGER'S solution. If 12 mg dose does not convert rhythm, repeat once in 1-2 minutes.

8. **Contact Medical Control.**

9. **EMT-Cs with authorization from Medical Control, or EMT-Ps may perform the following:**

   - Administer DILTIAZEM 10-20 mg IV over 2 minutes if the ADENOSINE did not covert rhythm and the patient does not have CHF or significant ventricular dysfunction. If this does not slow or convert rhythm within 15 minutes, repeat DILTIAZEM 10-20 mg IV over 2 minutes.
     - If, following dose of DILTIAZEM the patient's systolic blood pressure drops below 100mmHg, administer CALCIUM CHLORIDE 500 mg IV slowly.

10. **With authorization from Medical Control, EMT-Ps ONLY may perform the following:**

    - Administer VERAPAMIL HCL (Calan®, Isoptin®) 2.5-5.0 mg IV over 1-2 minutes if the ADENOSINE did not convert rhythm and the patient does not have CHF or significant ventricular dysfunction. If this dose does not convert rhythm within 15 minutes, repeat VERAPAMIL HCL 2.5-5.0 mg IV over 1-2 minutes
      - If, following dose of VERAPAMIL the patient's systolic blood pressure drops below 100mmHg, administer CALCIUM CHLORIDE 500 mg IV slowly.
    - If SVT continues following dose of VERAPAMIL HCL or DILTIAZEM, Medical Control may authorize administration of AMIODARONE 150 mg IV over 10 minutes. (Use caution if patient has history of CHF or ventricular dysfunction).
    - Administer AMIODARONE by IV Infusion Pump at a rate as directed by Medical Control (typically 1-15 mg/min. Faster rates are associated with a higher risk of hypotension).

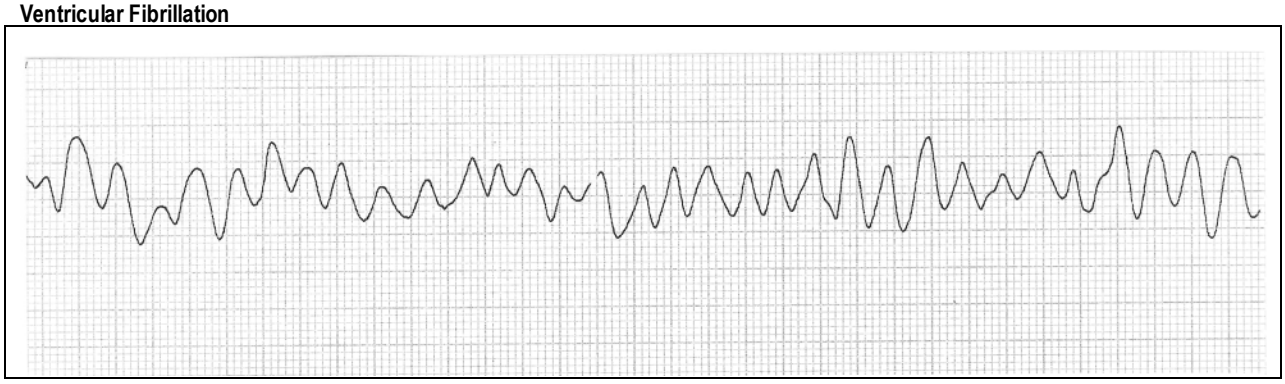
Due to the high risk of side effects with incorrect dosage, AMIODARONE infusions may only be administered by IV Infusion Pump. AMIODARONE must be mixed with D5W and should be administered using a "PVC-free" bag and tubing (if available) and run as an isolated IV (not piggybacked into NORMAL SALINE or LACTATED RINGER'S solution).

11. **Transport the patient without delay to the nearest appropriate Hospital Emergency Facility.**

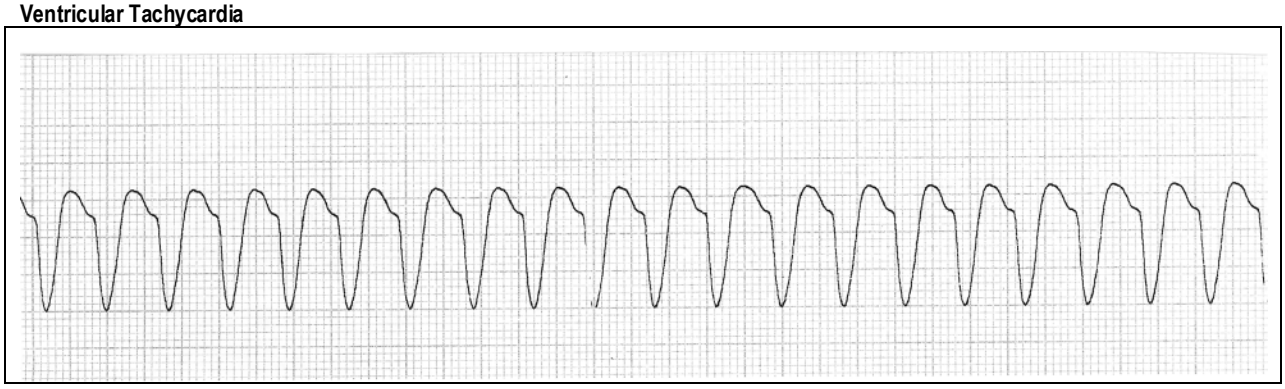
12. **Document all incident information by completing the *RI EMS Ambulance Run Report*.**

2.13 Ventricular Fibrillation (VF) and Pulseless Ventricular Tachycardia (VT) [ALS]

Ventricular Fibrillation



Ventricular Tachycardia



RECOGNITION

- ✔ Unconscious, pulseless patient with ventricular fibrillation (VF) or ventricular tachycardia (VT) on ECG and where the cardiac arrest may be witnessed or unwitnessed.
    - **EMS Witnessed Arrest:** In keeping with the time-to-defibrillation focus of the 2005 AHA Guidelines, a "Witnessed Cardiac Arrest" is one where the patient's collapse and pulselessness occur in the presence of the EMT and a defibrillator shock can be delivered within 30 seconds.
    - **Unwitnessed Arrest:** Other cardiac arrest situations where a defibrillator shock cannot be delivered within 30 seconds.

TREATMENT

1. **Check the pulse**

STOP	Follow the *Ventricular Fibrillation/Pulseless Ventricular Tachycardia* protocol only if the pulse is absent. If at any time the patient shows signs of recovery and there is a return of pulse, follow all appropriate protocols.

2. **If Unwitnessed Cardiac Arrest, begin CPR using the current sequence recommended by the American Heart Association and deliver about 5 cycles or 2 minutes of CPR while obtaining and preparing defibrillator.**
   - Continue cycles of CPR/defibrillation according to AHA guidelines.
   - If Witnessed Cardiac Arrest, proceed to immediate defibrillation.
3. **Confirm VF/VT on monitor/defibrillator.**
   - Immediately apply "quick-look" paddles or "hands-free" electrodes. Use adult standard paddles/pads for all patients > 1 year old (10 kg.) and ensure adequate spacing (>3cm.) between paddles/pads. Use infant paddles/pads on patients < 1 year old. Anterior/posterior placement where possible is preferred.
   - Identify VF or VT. Changing the location of the electrodes may reveal VF that first appears to be asystole.
   - Record initial ECG rhythm and attempted defibrillations; attach copies of the rhythm strips to the hospital copy of the *RI EMS Ambulance Run Report*, as part of required documentation.
4. **Attempt to defibrillate.**
   - **Adult patients:** Check pulse and identify rhythm. If VF/VT persists, defibrillate at 360 joules monophasic or manufacturer's biphasic setting.
   - **Pediatric patients:** defibrillate as indicated below. Use Pediatric Dosing Device to determine patient weight in kg. Check pulse and identify rhythm.
     - If VF/VT persists, defibrillate at 2 joules/kg (~ 1 joule/ lb) monophasic or manufacturer's biphasic setting.
     - All subsequent defibrillations to be at 4 joules/kg (~ 2 joules/lb) monophasic or manufacturer's biphasic setting.
5. **Immediately resume CPR and perform any additional defibrillations per current AHA guidelines.**
6. **Check rhythm after performance of cycles of defibrillation and CPR according to AHA guidelines.**
   - If VF/VT is converted to another perfusing rhythm check pulse, reassess the patient, and follow all appropriate protocols.
   - If VF/VT persists, continue treatment as indicated below.
7. **Begin or continue CPR sequence following current AHA guidelines.**

> ⚠ DO NOT INTERRUPT CPR FOR MORE THAN 5 SECONDS EXCEPT FOR A MAXIMUM OF 30 SECONDS TO DEFIBRILLATE, MOVE THE PATIENT OR PERFORM ADVANCED AIRWAY TECHNIQUES WHEN INDICATED. IF SAFE PATIENT TRANSPORT WILL CAUSE DELAYS, PERFORM ALS INTERVENTIONS PRIOR TO PATIENT MOVMENT IF POSSIBLE.

8. **Place the patient on a cardiac monitor, if not previously done.**
   - Observe and record the initial ECG rhythm, and any rhythm changes.
   - Attach a copy of the initial rhythm strip to the hospital copy of the *RI EMS Ambulance Run Report*.

9. **Establish at least one IV of NORMAL SALINE or LACTATED RINGER'S solution to run at KVO rate.**
   - Administer NORMAL SALINE or LACTATED RINGER'S solution at KVO (~20 mL/hour).
   - If unable to establish an IV in 2 attempts or 5 minutes, transport the patient to the nearest appropriate Hospital Emergency Facility. Any further attempt at IV placement must occur en route.
   - If unable to establish an IV and patient movement/transport will require CPR interruption, perform ALS interventions prior to patient movement. If patient movement/ transport will not interrupt CPR, perform ALS interventions during patient transport.
10. **Consider an advanced airway as indicated in the *Airway Management and Respiratory Support* protocol.**
    - Whenever possible, ventilate the patient using high-concentration oxygen.
11. **Administer EPINEPHRINE as indicated below**
    - **Adult patients:** Administer EPINEPHRINE 1:10,000 1.0 mg IV push. Repeat every 3-5 minutes if VF/pulseless VT persists.
      - If unable to establish an IV administer EPINEPHRINE 1:1,000 2.0-2.5 mg diluted in 10 mL NORMAL SALINE by endotracheal tube. Repeat every 3-5 minutes if VF/pulseless VT persists.
    - **Pediatric patients:** Administer EPINEPHRINE 1:10,000 0.01 mg/kg (0.1 mL/kg) IV push and repeat every 3-5 minutes as necessary (use Pediatric Dosing device to determine patient weight in kg).
      - If unable to establish an IV, administer EPINEPHRINE 1:1,000 0.1 mg/kg (0.1 mL/kg), diluted to 3-5 mL with NORMAL SALINE.
12. **Continue CPR for 30-60 seconds after administration of EPINEPHRINE.**
13. **Attempt to defibrillate as indicated below:**
    - **Adult patients:** Defibrillate at 360 joules (maximum energy) monophasic or at manufacturer's biphasic setting.
    - **Pediatric patients:** Defibrillate as indicated on pediatric dosing device: 4 joules/kg (~2 joules/lb) monophasic or at manufacturer's biphasic setting.
14. **If VF/VT persists, continue sequence of EPINEPHRINE administration, then defibrillation every 3-5 minutes.**
15. **If VF/VT persists, and while continuing EPINEPHRINE/defibrillation sequence, administer AMIODARONE or LIDOCAINE HCL as indicated below.**
    - Administer AMIODARONE IV bolus:
      - **Adult patients:** administer AMIODARONE 300 mg IV bolus once.
      - **Pediatric Patients:** administer AMIODARONE 5 mg/kg IV bolus once (maximum dose: 300mg).
    - **OR** Administer LIDOCAINE IV bolus:
      - **All patients:** Administer LIDOCAINE HCL 1.0- 1.5 mg/kg IV push (or 2.0- 3.0 mg/kg by endotracheal tube), followed by NORMAL SALINE flush.

- If VF/VT persists, repeat administration of LIDOCAINE HCL every 3-5 minutes to a maximum total of 3mg/kg of LIDOCAINE HCL.
- If VF/VT is converted to a perfusing rhythm, administer LIDOCAINE HCL by IV Infusion at 2 mg/min. Infusion should be discontinued if any signs of toxicity or decompensation appear **OR** Administer LIDOCAINE HCL by mini-bolus technique using 0.25mg/kg IV bolus every 15 minutes (typical adult dose 25mg).

Due to the high risk of side effects with incorrect dosage, LIDOCAINE infusions should be administered by IV Infusion Pump when possible. If an IV Infusion Pump is not available, LIDOCAINE may be administered by carefully monitoring the drip rate in a "micro-drip" IV administration set. Passive or gravity-controlled rate control devices (e.g., Dial-a-Flo®) are considered incapable of strict mechanical control and their use is not permitted at any time.

16. **If VF/VT is converted to a perfusing rhythm, contact Medical Control for permission to administer AMIODARONE. A loading dose may be considered if not already given with careful attention to the risk of side effects.**

NOTE: Typically if a drug has already been administered, that same drug should be continued if maintenance infusion is administered.

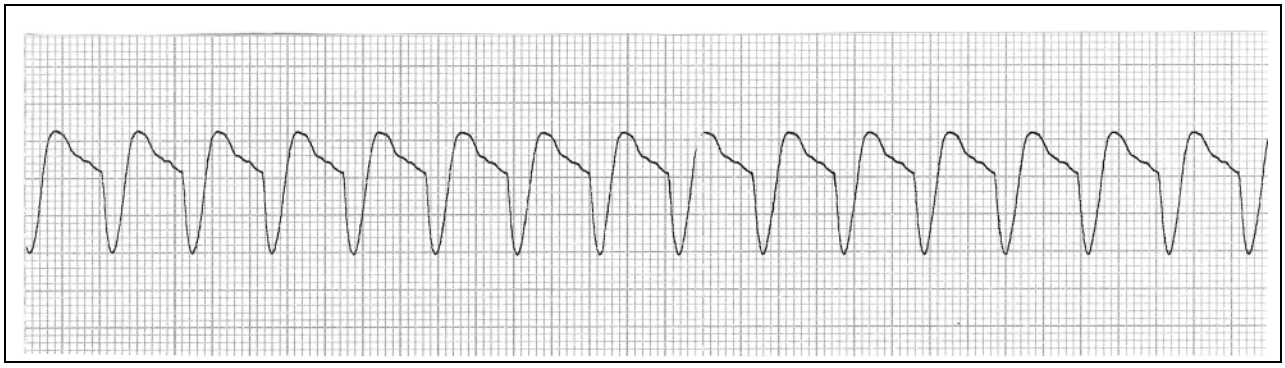
- Administer AMIODARONE by IV Infusion Pump Only at a rate as directed by Medical Control (typically 1- 15 mg/min – faster rates are associated with a higher risk of hypotension).

Due to the high risk of side effects with incorrect dosage, AMIODARONE infusions may only be administered by IV Infusion Pump. AMIODARONE must be mixed with D5W and should be administered using a "PVC-free" bag and tubing (if available) and run as an isolated IV (not piggybacked into NORMAL SALINE or LACTATED RINGER'S solution).

17. **For certain conditions, Medical Control may authorize administration of SODIUM BICARBONATE 1 mEq/kg IV push, followed by 0.5 mEq/kg IV push every 10 minutes.**
18. **EMT-Ps ONLY: For *Torsades de Pointes*, consider administration of MAGNESIUM SULFATE 1 gram IV. Dose may be repeated once (max. dosage 2 grams).**
19. **Transport the patient without delay to the nearest Hospital Emergency Facility.**
20. **With authorization from Medical Control, consider administration of GLUCAGON if beta-blocker overdose is suspected.**
21. **EMT-Ps, or EMT-Cs with authorization from Medical Control, may consider administration of CALCIUM CHLORIDE, 1g IV, if hyperkalemia or calcium channel blocker overdose are suspected.**
22. **Document all incident information by completing the *RI EMS Ambulance Run Report*.**

2.15 Ventricular Tachycardia (VT) [ALS]

Patient unconscious, with a pulse, or with unstable vital signs



RECOGNITION

- ✔ Wide-complex tachycardia (ventricular rate usually >150 per minute) on ECG of patient who is unconscious, or who has any of the following signs and symptoms: chest pain, dyspnea, decreased level of consciousness, hypotension, or shock.

ASSESSMENT AND INITIAL TREATMENT

1. **Assess patient, obtain initial vital signs, and frequently reassess patient's condition.**
2. **Administer OXYGEN with the highest-concentration device tolerated.**
   - ▸ Assist ventilations as indicated.

SPECIFIC INTERVENTIONS

3. **Place the patient on a cardiac monitor.**
   - ▸ Observe and record the initial ECG rhythm and any rhythm changes.
   - ▸ Attach a copy of the initial rhythm strip, identified with the patient's name and birthdate, if available, to the hospital copy of the *RI EMS Ambulance Run Report*.
4. **Attempt to cardiovert the patient, as indicated below:**
   - ▸ Consider administration of a sedative and/or analgesic, following the *Pain Management and Sedation* protocol.
   - ▸ Record initial ECG rhythm and attempted cardioversions. Attach copies of the rhythm strips, identified with the patient's name and birthdate, to the hospital copy of the *RI EMS Ambulance Run Report* as part of required documentation.
   - ▸ Attempt synchronized cardioversion as indicated below:

- **Adult patient:** cardiovert at 50 joules. If unsuccessful, may repeat at increasing energy levels: 100 joules; 200 joules; 300 joules; 360 joules (or maximum energy) or manufacturer's biphasic equivalent.
- **Pediatric patients <5 feet tall (<35 kg/75 lbs):** attempt synchronized cardioversion at 0.5 joule/kg (0.25 joule/lb). If unsuccessful, may repeat at increasing energy levels: 1.0 joule/kg (0.5 joule/lb); 2 joules/kg (1 joule/lb); 4 joules/kg (2 joules/lb), or manufacturer's biphasic equivalent.

5. Establish IV access.

- Start at least one IV of NORMAL SALINE or LACTATED RINGER'S solution at KVO (~20 ml/hr).
- If unable to establish an IV in 2 attempts or 5 minutes, transport the patient to a Hospital Emergency Facility. Any further attempt at IV placement must occur en route.
- Transport the patient without delay to the nearest appropriate Hospital Emergency Facility.

6. If VT persists, EMT-Ps, or EMT-Cs with authorization from Medical Control, may administer AMIODARONE or LIDOCAINE HCL as indicated below:

- Administer AMIODARONE IV bolus:
  - Adult patients: administer AMIODARONE 150 mg IV bolus once.
  - Pediatric patients: administer AMIODARONE 5 mg/kg IV bolus once (maximum dose 300 mg).

  OR

- Administer LIDOCAINE IV bolus:
  - All patients: administer LIDOCAINE HCL 1.0-1.5 mg/kg IV push (or 2.0- 3.0 mg/kg by endotracheal tube) followed by NORMAL SALINE flush.
  - If VT persists, repeat administration of LIDOCAINE HCL every 3-5 minutes to a maximum total of 3 mg/kg of LIDOCAINE HCL.
  - If VT is converted to a perfusing rhythm, administer LIDOCAINE HCL by IV infusion at 2 mg/min. Infusion should be discontinued if any signs of toxicity or decompensation appear.

  OR

  - Administer LIDOCAINE HCL by mini-bolus technique using 0.25mg/kg IV bolus every 15 minutes (typical adult dose 25mg).

> ⚠ Due to the high risk of side effects with incorrect dosage, LIDOCAINE infusions should be administered by IV Infusion Pump when possible. If an IV Infusion Pump is not available, LIDOCAINE may be administered by carefully monitoring the drip rate in a "micro-drip" IV administration set. Passive or gravity-controlled rate control devices (e.g., Dial-a-Flo®) are considered incapable of strict mechanical control and their use is not permitted at any time.

7. If VT is converted to a perfusing rhythm contact Medical Control for permission to administer AMIODARONE. A loading dose may be considered if not already given with careful attention to the risk of side effects.

NOTE: Typically, if a drug has already been administered, that same drug should be continued if maintenance infusion is administered.

- Administer AMIODARONE by infusion pump only, at a rate as directed by Medical Control (typically 1-15 mg/min – faster rates are associated with a higher risk of hypotension).

Due to the high risk of side effects with incorrect dosage, AMIODARONE infusions may only be administered by IV Infusion Pump. AMIODARONE must be mixed with D5W and should be administered using a "PVC-free" bag and tubing (if available) and run as an isolated IV (not piggybacked into NORMAL SALINE or LACTATED RINGER'S solution).

8. **With authorization from Medical Control, administer ADENOSINE (Adenocard®) as indicated below:**

ADENOSINE should not be given to patients taking Persantine® or Aggrenox®, or patients who have had a heart transplant as the effects may be prolonged and unpredictable.

- **Adult patients:** administer ADENOSINE 12 mg, rapid IV push (over 1-3 seconds), followed by rapid flush with 20 mL NORMAL SALINE or LACTATED RINGER'S solution.
  - If initial dose does not convert rhythm within 1-2 minutes, administer ADENOSINE 12 mg, rapid push (1-3 seconds), followed by rapid flush with 20 ml NORMAL SALINE or LACTATED RINGER'S solution.
- **Pediatric patients <5 feet tall (<35 kg/75 lbs):** administer ADENOSINE (Adenocard®) 0.2 mg/kg (maximum first dose: 12 mg), rapid IV push (over 1-3 seconds), followed by a rapid flush with 2-3 mL of NORMAL SALINE or LACTATED RINGER'S solution.
  - If initial dose does not convert rhythm within 1-2 minutes, administer ADENOSINE 0.2 mg/kg (maximum dose: 12 mg), rapid IV push (over 1-3 seconds), followed by a rapid flush with 2-3 mL of NORMAL SALINE or LACTATED RINGER'S solution.

9. **With authorization from Medical Control, consider administration of GLUCAGON if beta-blocker overdose is suspected.**

10. **EMT-Ps, or EMT-Cs with authorization from Medical Control, may consider administration of CALCIUM CHLORIDE, 1g IV, if hyperkalemia or calcium channel blocker overdose are suspected.**

11. **If VT is converted to another rhythm, follow all appropriate protocols.**

12. **Document all incident information by completing the *RI EMS Ambulance Run Report*.**

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3.1 Cold Exposure – Frostbite

TREATMENT

1. **Assess patient.**
    - Obtain vital signs.
    - Determine mental status.
    - Frequently reassess patient's condition.
2. **If patient may be hypothermic, follow the *Cold Exposure – Hypothermia* protocol.**
3. **Avoid trauma to injured areas (do not rub; do not break blisters.)**
4. **Apply dry sterile dressings as padding over injured areas and splint, avoiding pressure or constriction. Do not allow the patient to use injured parts.**
5. **Do not apply snow or ice; but do not thaw injured areas if there is a chance that they may refreeze before reaching the hospital.**
6. **Keep the frozen part away from direct heat, but keep the patient warm.**
7. **Contact Medical Control.**
8. **Transport the patient without delay to a Hospital Emergency Facility.**
9. **Document all incident information by completing the *RI EMS Ambulance Run Report*.**

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3.6 Poisoning and Overdose

TREATMENT

1. **If the patient is unconscious or has impaired consciousness, follow the *Impaired Consciousness* protocol.**
2. **Consider contacting the Regional Center for Poison Control & Prevention (1-800-682-9211) for advice.**
3. **Contact Medical Control for permission to administer ACTIVATED CHARCOAL as follows:**
   - Administer ACTIVATED CHARCOAL 1 gm/kg (0.5 gm/lb) PO, mixed with water or Sorbitol®.

     ⚠ ACTIVATED CHARCOAL may only be administered PO if the patient is fully conscious or has an endotracheal tube in place. Do not administer ACTIVATED CHARCOAL if patient has ingested a hydrocarbon, petroleum distillate, or a caustic substance.

   - **EMT-Ps ONLY** may administer ACTIVATED CHARCOAL by orogastric or nasogastric tube, if unable to administer PO.

ALS PERSONNEL ONLY

4. **Place the patient on a cardiac monitor.**
   - Observe and record the initial ECG rhythm and any rhythm changes.
   - Attach a copy of the initial rhythm strip to the hospital copy of the *RI EMS Ambulance Run Report*.
5. **Start an IV of NORMAL SALINE or LACTATED RINGER'S solution**
   - **Adult patients:** administer NORMAL SALINE or LACTATED RINGER'S solution at KVO (20-30 mL/hour)
     - If there is evidence of shock, run IV "wide open."
   - **Pediatric patients <16 years old:** administer NORMAL SALINE or LACTATED RINGER'S solution at KVO (10-20 mL/hour)
     - If there is evidence of shock, administer boluses of 20 mL/kg by rapid IV push.
   - If unable to establish IV access in 2 attempts or less than 5 minutes, transport the patient to a Hospital Emergency Facility. Any further attempts at IV placement must occur en route.

All EMTs

6. **Transport the patient without delay to a Hospital Emergency Facility bringing all available medications, vials, and other information regarding possible source of the poisoning or overdose. Attempt to obtain an MSDS sheet if at an occupational location.**
7. **Contact Medical Control.**
8. **Document all incident information by completing the *RI EMS Ambulance Run Report*.**

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4.1 Abdominal Pain

TREATMENT

1. **Assess patient.**
   - Obtain vital signs.
   - Determine mental status.
   - Frequently reassess patient's condition.
   - Attempt to determine the following:
     - Nature, duration, location and radiation of pain;
     - Associated symptoms or complaints;
     - Related history (e.g., trauma, ingestion, pregnancy, surgery).
   - Examine abdomen for tenderness, guarding, masses.
2. **If abdominal pain is associated with abdominal trauma, follow the *Trauma* protocol, with specific reference to *Further Care of Abdominal Trauma*.**
3. **Allow the patient to assume a comfortable position, unless contraindicated. Flexion of the knees and hips may help decrease pain.**
4. **If there is evidence of shock, follow the *Shock* protocol.**
5. **Administer OXYGEN with the highest-concentration device tolerated.**

ALS PERSONNEL ONLY

6. **Consider placing the patient on a cardiac monitor.**
   - Observe and record the initial ECG rhythm and any rhythm changes.
   - Attach a copy of the initial rhythm strip to the hospital copy of the *RI EMS Ambulance Run Report*.
7. **Consider starting an IV access device or an IV of NORMAL SALINE or LACTATED RINGER'S solution.**
   - **Adult patients:** If an IV has been started, administer NORMAL SALINE or LACTATED RINGER'S solution at KVO (20-30 mL/hour.)
   - **Pediatric patients < 5 feet tall (<35 kg/ 75 lbs.):** If an IV has been started, administer NORMAL SALINE or LACTATED RINGER'S solution at KVO (10-20 mL/hour.)
   - If unable to establish an IV in 2 attempts or 5 minutes, transport the patient to a Hospital Emergency Facility. Any further attempt at IV placement must occur en route.

ALL EMTs

8. **Contact Medical Control.**
9. **Transport the patient without delay to a Hospital Emergency Facility.**
10. **Document all incident information by completing the *RI EMS Ambulance Run Report*.**

4.4 Asthma (COPD)

RECOGNITION

- ✔ Asthma and COPD may have similar features. COPD is typically seen in adult patients only. Wheezing may be from causes other than asthma; consider airway obstruction, upper airway swelling from allergy, infection or other cause, and CHF.
- ✔ Common signs/symptoms may include:
    - Shortness of breath;
    - Use of accessory muscles of respiration;
    - Nasal flaring, retractions between ribs, above clavicles or sternum primarily in children;
    - Wheezes, primarily on expiration;
    - Prolonged expiratory phase;
    - High respiratory rate;
    - History of asthma or COPD;
    - Use of medications prescribed for asthma or COPD;
    - History of smoking;
    - History of exposure to known asthma triggers.

TREATMENT

ALL EMTs

1. **Maintain a patent airway.**
2. **Assist ventilation and oxygenation as needed.**
    - ▸ Administer OXYGEN with the highest concentration device tolerated.
3. **Assess patient, obtain initial vital signs, and frequently reassess patient's condition.**

> ⚠ Patients with severe respiratory distress or altered cooperation may not benefit from inhaled bronchodilator therapy. Administration of EPINEPHERINE IM may be indicated in these patients.

BLS PERSONNEL

4. **Assist patient with administration of one dose of the patient's own bronchodilator therapy (ALBUTEROL or other prescribed medication.)**

5. **Contact Medical Control, for authorization to administer bronchodilator therapy as indicated below:**

   - **Patients ≥ 6 months of age:** Administer 2.5 mg of ALBUTEROL (Proventil®, Ventolin®) 0.083% solution (or 0.5 mL of 0.5% solution mixed with 2.5 mL NORMAL SALINE) by nebulizer over 5-15 minutes. May repeat x 2 en route.
   - **Patients < 6 months of age:** administer 1.25 mg of ALBUTEROL 0.083% solution (or 0.25 mL of 0.5% solution mixed with 2.5 mL NORMAL SALINE) by nebulizer over 5 to 15 minutes. May repeat x 2 en route.
   - For worsening or severe respiratory distress, or if unable to cooperate with nebulized bronchodilator therapy, administer EPINEPHRINE 1:1000 (1 mg/mL) as indicated below:
     - **Adult patients:** Administer EPINEPHRINE 1:1000 0.3 mg (0.3 mL) IM by drawing from ampules or vials or with a pre-filled syringe (eg: Ana-Kit®) or an EpiPen® auto injector. May repeat x1 in 15 minutes if no improvement

For patients over 50 years of age, or who have a known cardiac history, contact Medical Control prior to administration of EPINEPHRINE.

ALS PERSONNEL ONLY

6. **Administer IPRATROPIUM (ATROVENT®) and/or ALBUTEROL:**

   - Administer IPRATROPIUM (ATROVENT®) as follows:
     - **All Patients:** Administer 500mcg/2.5 ml of IPRATROPIUM (ATROVENT®) solution by nebulizer over 5 to 15 minutes. Administer one dose of IPRATROPIUM only. IPRATROPIUM may be combined with ALBUTEROL (DUONEB®).
   - Administer ALBUTEROL as follows:
     - **Adult Patients:** administer 2.5 mg of ALBUTEROL 0.083% solution (or 0.5 mL of 0.5% solution mixed with 2.5 mL NORMAL SALINE) by nebulizer over 5 to 15 minutes. May repeat x2 en route.
     - **Patients > 6 months of age:** administer 2.5 mg of ALBUTEROL 0.083% solution (or 0.5 mL of 0.5% solution mixed with 2.5 mL NORMAL SALINE) by nebulizer over 5 to15 minutes. May repeat x2 en route.
     - **Patients < 6 months of age:** administer 1.25 mg of ALBUTEROL 0.083% solution (or 0.25 mL of 0.5% solution mixed with 2.5 mL NORMAL SALINE) by nebulizer over 5 to 15 minutes. May repeat x2 en route.

7. **For worsening or severe respiratory distress, or if unable to cooperate with nebulized bronchodilator therapy, administer EPINEPHRINE 1:1000 (1 mg/mL) as indicated below:**
   - **Adult patients:** Administer EPINEPHRINE 1:1000 0.3 mg (0.3 mL) IM by drawing from ampules or vials or with a pre-filled syringe (eg: Ana-Kit®) or an EpiPen® auto injector. May repeat x1 in 15 minutes if no improvement

For patients over 50 years of age, or who have a known cardiac history, contact Medical Control prior to administration of EPINEPHRINE.

8. **As an alternative to EPINEPHRINE, administer TERBUTALINE (Brethine®, Bricanyl®):**
   - **Adult patients:** Administer TERBUTALINE (Brethine®, Bricanyl®) 0.25 mg SQ.
   - **Pediatric patients <5 feet tall (<35 kg/75 lbs):** Administer TERBUTALINE (Brethine®, Bricanyl®) 0.01 mg/kg SQ, to a maximum of 0.25 mg/dose.
9. **Place the patient on a cardiac monitor.**
   - Observe and record the initial ECG rhythm, and any rhythm changes.
   - Attach a copy of the initial rhythm strip to the hospital copy of the *RI EMS Ambulance Run Report*.
10. **Establish IV access.**
    - Start at least one IV of NORMAL SALINE or LACTATED RINGER'S solution at KVO (~20 ml/hour.)
    - If unable to establish an IV in 2 attempts or 5 minutes transport the patient to a Hospital Emergency Facility.
11. **Administer HYDROCORTISONE SODIUM SUCCINATE (Solu-Cortef®) as follows:**
    - **Adult patients:** 100 mg IV.
    - **Pediatric patients (<16 years old):** 2 mg/kg IV, maximum dose 100mg.
12. **With authorization from Medical Control, EMT-Ps ONLY may administer EPINEPHRINE 2-10 mcg /min by IV Infusion Pump Only.**

Due to the high risk of side effects with incorrect dosages EPINEPHRINE infusions for respiratory distress may only be administered by IV Infusion Pump.

- If further respiratory or ventilatory problems arise, follow the *Airway Management and Respiratory Support* protocol.

ALL EMTs

13. **Transport the patient without delay to a Hospital Emergency Facility.**
14. **Document all incident information by completing the *RI EMS Ambulance Run Report*.**

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4.7 Impaired Consciousness

ALL EMTs

1. **Unless able to rule out trauma, stabilize neck and spine with cervical collar and spineboard as soon as possible.**
2. **If poisoning or overdose are suspected, see the *Poisoning and Overdose* protocol.**
3. **Perform initial assessment while protecting the airway.**
   - Determine the level of consciousness with the AVPU method or Glasgow Coma Scale.
   - Evaluate pupillary response and size.
   - Check breath for odors (alcoholic beverage or acetone).
   - Examine for needle tracks.
   - Examine for medic-alert tags.
4. **Prevent patient from sustaining any injuries.**
5. **Position on left side (unless contraindicated), and suction secretions if needed.**
6. **Administer OXYGEN with the highest concentration device indicated; assist ventilation as necessary.**
   - If signs of ventilatory problems arise, follow the *Airway Management and Respiratory Support* protocol.
7. **Obtain history from family and/or bystanders including medications taken, possible ingestions or drug use, and possible trauma or other conditions.**
8. **If electronic glucose meter is available, determine blood glucose (bG) concentration.**
9. **If the bG concentration is <60 mg/dl or if the patient has signs and/or symptoms of hypoglycemia regardless of the availability of bG measurement, and the patient's mental status is "alert" (A) or becomes "alert to verbal"(V) stimuli:**
   - Administer ORAL GLUCOSE with approximately 15 grams of GLUCOSE (e.g. Glucola, Glutose 15™, InstaGlucose).
   - Repeat administration of ORAL GLUCOSE product, approximately 15 grams, if evidence of hypoglycemia persists beyond 15 minutes after the first dose.

Do not administer ORAL GLUCOSE product to a patient who is vomiting, nauseated, or not fully awake.

BLS PERSONNEL

10. **If the bG concentration is <60 mg/dL or if the patient has signs and/or symptoms of hypoglycemia and bG measurement is unavailable:**
    - Contact Medical Control for authorization to administer GLUCAGON, if available:
      - **Adult patients:** 1mg (1 unit) IM
      - **Pediatric patients (< 16 years old):** 0.1 mg/kg to a maximum of 1mg (1 unit), IM

11. **If no improvement in mental status, contact MEDICAL CONTROL for permission to administer NALOXONE HCL (Narcan®) 0.4mg IM or Intranasal (IN).**
    - If narcotic overdose is NOT suspected, repeat NALOXONE (Narcan®) in 0.4mg doses at 1-minute intervals until improvement in mental status or a total dose of 2 mg.
    - If narcotic overdose IS suspected, repeat NALOXONE HCL (Narcan®) in 2.0mg doses to a total of 10mg or as directed by Medical Control.

ALS PERSONNEL ONLY

12. **Establish IV access.**
    - Start an IV of NORMAL SALINE or LACTATED RINGER'S solution at KVO rate (~20 ml per hour).
    - If unable to start an IV in 2 attempts or 5 minutes transport the patient to a Hospital Emergency Facility. Any further attempt at IV placement must occur en route.
13. **If the bG concentration is <60 mg/dL or if the patient has signs and/or symptoms of hypoglycemia and bG measurement is unavailable, administer DEXTROSE ($D_{50}W$) as follows:**
    - **Adult patients:** Administer DEXTROSE ($D_{50}W$) 25 gm (50 mL) IV over 2 minutes. Repeat once in 5 minutes if there is no improvement in mental status.
    - **Pediatric patients (<5 feet tall [<35kg/75 lbs]) with bG <60 mg/dL or unknown:** Administer DEXTROSE. Use $D_{25}W$ (may be prepared by diluting $D_{50}W$ 1:1 with sterile water or NS) and administer as indicated on pediatric dosing device at 2mL/kg (0.5mg/kg) over 5 minutes.
    - If unable to establish an IV, administer GLUCAGON as follows:
      - **Adult patients:** 1 mg (1 unit) IM
      - **Pediatric patients (< 16 years old):** 0.1 mg/kg to a maximum of 1mg (1 unit), IM
14. **If the bG concentration is <60 mg/dL or if the patient has signs and/or symptoms of hypoglycemia and bG measurement is unavailable, administer THIAMINE HCl 100 mg IV push or IM.**
15. **If no improvement in mental status, administer NALOXONE HCL (Narcan®) 0.4mg IV push (or IM, Intranasal [IN], or diluted in 10 mL NORMAL SALINE by endotracheal tube).**
    - If narcotic overdose is NOT suspected, repeat NALOXONE HCL (Narcan®) in 0.4mg doses at 1-minute intervals until improvement in mental status or a total dose of 2 mg.
    - If narcotic overdose IS suspected, repeat NALOXONE HCL (Narcan®) in 2.0mg doses until improvement in mental status or to a total of 10mg, or as directed by Medical Control.
16. **Place the patient on a cardiac monitor.**
    - Observe and record the initial ECG rhythm, and any rhythm changes.
    - Attach a copy of the initial rhythm strip to the hospital copy of the *RI EMS Ambulance Run Report*.

ALL EMTs

17. **Contact Medical Control.**
18. **Transport patient without delay to a Hospital Emergency Facility.**
19. **Document all incident information by completing the *RI EMS Ambulance Run Report*.**

4.10 Seizures/Postictal State

For pediatric patients < 16 years old, follow *Seizures (Pediatric*) protocol.

RECOGNITION

- **Seizure:** A sudden episode of unresponsiveness, characterized by mild to severe involuntary contractions of skeletal muscles.
- **Postictal State:** Third phase of a convulsive seizure. Convulsions stop, and the patient may be drowsy, confused, combative, or remain unconscious for hours.

ASSESSMENT AND TREATMENT

1. **Unless able to rule out trauma, stabilize neck and spine with cervical collar and spineboard as soon as possible.**
2. **Perform initial assessment while protecting the airway.**
   - Determine the level of consciousness with the AVPU method or Glasgow Coma Scale.
   - Prevent patient from sustaining any injuries.
3. **Position on left side (unless contraindicated), and suction secretions if needed.**
4. **Administer OXYGEN with the highest concentration device indicated; assist ventilation as necessary.**
   - If signs of ventilatory problems arise, follow the *Airway Management and Respiratory Support* protocol.
5. **Obtain history from family and/or bystanders including medications. Determine, if possible, any previous history of seizure activity and possible causes for current seizure.**

ALL EMTs

6. **If electronic glucose meter is available, determine blood glucose (bG) concentration.**
7. **If the bG concentration is <60 mg/dL or if the patient has signs and/or symptoms of hypoglycemia regardless of the availability of bG measurement, and the patient's mental status is "alert" (A) or becomes "alert to verbal"(V) stimuli,**
   - Administer ORAL GLUCOSE with approximately 15 grams of GLUCOSE (e.g. Glucola, Glutose 15™, InstaGlucose).
   - Repeat administration of ORAL GLUCOSE product, approximately 15 grams, if evidence of hypoglycemia persists beyond 15 minutes after the first dose.

Do not administer ORAL GLUCOSE product to a patient who is vomiting, nauseated, or not fully awake.

BLS PERSONNEL

8. **If seizure activity persists, or if the patient has impaired consciousness, contact Medical Control for authorization to administer GLUCAGON 1 mg (1 unit) IM, if available.**

ALS PERSONNEL ONLY

9. **Place the patient on a cardiac monitor.**
   - Observe and record the initial ECG rhythm, and any rhythm changes.
   - Attach a copy of the initial rhythm strip to the hospital copy of the *RI EMS Ambulance Run Report.*
10. **If seizure activity persists, start an IV of NORMAL SALINE or LACTATED RINGER'S solution at KVO rate (~20 ml per hour).**
    - If unable to start an IV in 2 attempts or 5 minutes transport the patient to a Hospital Emergency Facility. Any further attempt at IV placement must occur en route.
11. **If the bG concentration is <60 mg/dl or if the patient has signs and/or symptoms of hypoglycemia and bG measurement is unavailable:**
    - Administer THIAMINE HCl 100 mg IV push or IM.
    - Administer DEXTROSE ($D_{50}W$) 25 gm (50 mL) IV over 2 minutes. Repeat once in 5 minutes if there is no improvement in mental status.
    - If unable to establish an IV, administer GLUCAGON 1 mg (1 unit) IM.

BLS PERSONNEL

12. **If no improvement in mental status, contact Medical Control for permission to administer NALOXONE HCL (Narcan®) 0.4mg IM or Intranasal (IN).**
    - If narcotic overdose is NOT suspected, repeat at 1-minute intervals until improvement in mental status or a total dose of 2 mg.
    - If narcotic overdose is suspected, repeat NALOXONE HCL (Narcan®) in 2.0mg doses to a total of 10mg or as directed by Medical Control.

ALS PERSONNEL ONLY

13. **If no improvement in mental status, administer NALOXONE HCL (Narcan®) 0.4mg IV push (or IM, Intranasal [IN], or diluted in 10 mL NORMAL SALINE by endotracheal tube [ET]).**
    - If no improvement in mental status and narcotic overdose IS NOT suspected, repeat at 1-minute intervals until improvement in mental status or a total dose of 2 mg.
    - If no improvement in mental status and narcotic overdose IS suspected, repeat NALOXONE HCL (Narcan®) in 2.0mg doses to a total of 10mg or as directed by Medical Control.

14. If seizures continue, EMT-Ps or EMT-Cs may consider administration of MIDAZOLAM (Versed®), LORAZEPAM (Ativan®), OR DIAZEPAM (Valium®) as follows:

- Administer MIDAZOLAM (Versed®) as follows:
  - Administer MIDAZOLAM (Versed®) 0.05-0.1 mg/kg IV over 1 minute, or IM or IN, to a maximum dose of 5 mg.
  - Allow 2 minutes for effect (10 minutes for IM). Medical Control may authorize the administration of subsequent doses. Recommendation: 25% of initial dose, to a maximum total dose of 0.6 mg/kg, to maintain effect.
- **OR** Administer LORAZEPAM (Ativan®) as follows:
  - Administer LORAZEPAM (Ativan®) 0.05-0.1 mg/kg IV over 1 minute, or IM, to a maximum dose of 5 mg.
  - Allow 2 minutes for effect (10 minutes for IM). Medical Control may authorize the administration of subsequent doses. Recommendation: 25% of initial dose, to a maximum total dose of 0.6 mg/kg, to maintain effect.
- **OR** Administer DIAZEPAM (Valium®) as follows:
  - Administer DIAZEPAM (Valium®) 0.05-0.1 mg/kg IV over 1 minute, or PR, to a maximum dose of 5 mg.
  - Allow 2 minutes for effect (10 minutes for PR). Medical Control may authorize the administration of subsequent doses. Recommendation: 25% of initial dose, to a maximum total dose of 0.6 mg/kg, to maintain effect.

> ⚠ **NOTE:** The preferred drug for treatment of continuing seizures (*status epilepticus*) is LORAZEPAM (Ativan®). LORAZEPAM can be given IV or IM. MIDAZOLAM (Versed®) is also effective for seizure treatment, and has the advantage that it can be given by IV, IM, IN, or ET routes. DIAZEPAM (Valium®) can be given IV or PR.

- If patient develops respiratory depression or hypotension, provide appropriate airway, respiratory and ventilatory support.

ALL EMTs

15. Contact Medical Control.

16. Transport patient without delay to a *Hospital Emergency Facility.*

17. Document all incident information by completing the *RI EMS Ambulance Run Report.*

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8.7 Pain Management and Sedation [ALS]

ASSESSMENT

- ✔ Assess and record the following signs and reassess frequently: level of consciousness; level of pain; heart rate, respiratory rate, blood pressure; ECG; oxygen saturation (if pulse oximeter is available.)

TREATMENT

> ⚠ Where indicated in the protocols, EMT-Cs or EMT-Ps are authorized to administer an initial dose of pain management medication without further orders. However, authorization from Medical Control is required for all subsequent doses and for administration of pain management and sedation medications for any purpose other than pain management (e.g. for sedation or treatment of CHF) unless specifically authorized by protocol (e.g. *Seizures*, *Major Incident*).

1. **For patients exhibiting moderate to severe pain, EMT-Cs or EMT-Ps may consider administering MORPHINE SULFATE:**

   - **All patients >= 6 months of age (~7 kg/15 lbs.):** administer MORPHINE SULFATE 0.1 mg/kg IV over 2 minutes, with a maximum initial dose of 6mg.
     - If unable to establish IV access, administer MORPHINE SULFATE 0.1 mg/kg IM, with a maximum initial dose of 6mg.
     - With authorization from Medical Control, administer additional doses of 0.05 mg/kg (adult patients: 1-3 mg) IV over 2 minutes, or IM, at 5-30 minute intervals until pain is relieved.
   - **Pediatric patients < 6 months of age (~7 kg/15 lbs.):** administer MORPHINE SULFATE 0.05 mg/kg IV over 2 minutes, with a maximum initial dose of 0.25 mg.
     - If unable to establish IV access, administer MORPHINE SULFATE 0.05 mg/kg IM, with a maximum initial dose of 0.25mg.
     - With authorization from Medical Control, administer additional doses of 0.05 mg/kg IVover 2 minutes, or IM, at 5-30 minute intervals until pain is relieved.

2. **For patients exhibiting moderate to severe pain, EMT-Ps ONLY may consider administering FENTANYL:**

   - **All patients >= 6 months of age (~7 kg/15 lbs.):** administer FENTANYL 1.0 mcg/kg IV over 2 minutes, with a maximum initial dose of 50 mcg.
     - If unable to establish IV access, administer FENTANYL 1.0 mcg/kg IM or IN, with a maximum initial dose of 50 mcg.
     - With authorization from Medical Control, administer additional doses of 0.5-1.0 mcg/kg (adult patients: 25-100 mcg) IV over 2 minutes, or IM or IN, at 5-30 minute intervals until pain is relieved.
   - **Pediatric patients < 6 months of age (~7 kg/15 lbs.):** administer FENTANYL 1 mcg/kg IV over 2 minutes, with a maximum initial dose of 5 mcg.
     - If unable to establish IV access, administer FENTANYL 1 mcg/kg IM or IN, with a max initial dose of 5mcg.
     - With authorization from Medical Control, administer additional doses of 0.5-1.0 mcg/kg IV over 2 minutes, or IM or IN, at 5-30 minute intervals until pain is relieved.

3. **If patient develops respiratory depression, hypotension, or depressed consciousness, EMT-Cs or EMT-Ps may administer NALOXONE HCl (Narcan®):**
   - Provide appropriate airway and ventilatory support.
   - Administer NALOXONE HCl (Narcan®) 0.01 mg/kg IV push, IM or IN.
     - Dose may also be diluted in NORMAL SALINE and administered by endotracheal tube, PRN.

     NOTE: This dose is appropriate to reduce the side effects induced by therapeutic narcotic use, in contrast to the dose used to reverse narcotic overdose (0.1 mg/kg.)

4. **For patients who are to be cardioverted, or for others who would benefit from sedation, EMT-Cs or EMT-Ps may consider administering ONE of the following medications:**
   - Administer MIDAZOLAM (Versed®) as follows:
     - **Adult patients:** administer MIDAZOLAM (Versed®) 0.05-0.1 mg/kg IV over 1 minute, or IM or IN, to a maximum dose of 5 mg.
     - **Pediatric patients <16 years old:** administer MIDAZOLAM (Versed®) at 0.05-0.1 mg/kg IV at a rate not to exceed 5mg per minute, or IM or IN, to a maximum dose of 2.5 mg.
     - Allow 2 min. for effect (10 min. for IM). Medical Control may authorize the administration of subsequent doses. Recommendation: 25% of initial dose, to max. total dose of 0.6 mg/kg, to maintain effect.
   - **OR** Administer LORAZEPAM (Ativan®) as follows:
     - **Adult patients:** administer LORAZEPAM (Ativan®) 0.05-0.1 mg/kg IV over 1 minute, or IM, to a maximum dose of 5 mg.
     - **Pediatric patients <16 years old:** administer LORAZEPAM (Ativan®) 0.05-0.1 mg/kg IV at a rate not to exceed 5mg per minute or IM, to a maximum dose of 2.5 mg.
     - Allow 2 min. for effect (10 min. for IM). Medical Control may authorize the administration of subsequent doses. Recommendation: 25% of initial dose, to max. total dose of 0.6 mg/kg, to maintain effect.
   - **OR** Administer DIAZEPAM (Valium®) as follows:
     - **Adult patients:** administer DIAZEPAM (Valium®) 0.05-0.1 mg/kg IV over 1 minute, or PR, to a maximum dose of 5 mg
     - **Pediatric patients <16 years old:** administer DIAZEPAM (Valium®) 0.05-0.1 mg/kg IV at a rate not to exceed 5mg per minute, or PR, to a maximum dose of 2.5 mg.
     - Allow 2 min. for effect (10 min. for IM). Medical Control may authorize the administration of subsequent doses. Recommendation: 25% of initial dose, to max. total dose of 0.6 mg/kg, to maintain effect.
   - If patient develops respiratory depression or hypotension, provide appropriate airway, respiratory and ventilatory support.

5. **For certain patients, EMT-Ps ONLY may consider administering both a narcotic (MORPHINE SULFATE or FENTANYL) and a benzodiazepine (MIDAZOLAM [Versed®], LORAZEPAM [Ativan®], DIAZEPAM [Valium®]).**

6. **Document procedures to provide pain management and sedation by completing the *RI EMS Ambulance Run Report*.**